

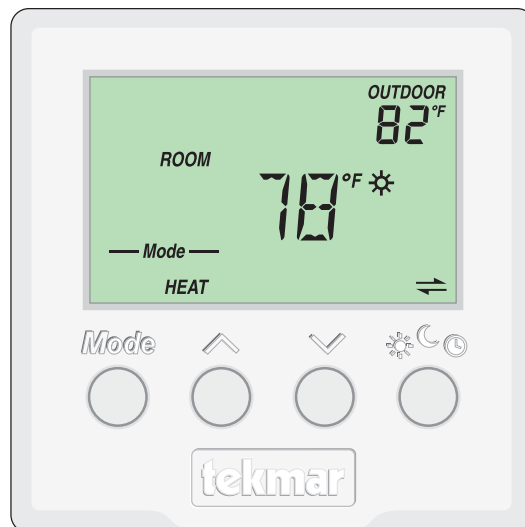
<b>1 Information Brochure</b> Choose controls to match application	<b>2 Application Brochure</b> Design your mechanical applications	<b>3 Rough In Wiring</b> Rough-in wiring instructions	<b>4 Wiring Brochure</b> Wiring and installation of specific control	<b>5 Data Brochure</b> Control settings and sequence of operation	<b>6 Job Record</b> Record settings & wiring details for future reference
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## Introduction

The tekmarNet<sup>®</sup>4 Thermostat 538 operates a single stage of heating with an option for floor sensing.

## Features

- tN4 Communication Compatible
- Requires 4 Wires (tN4, C, R, W)
- One Stage Heat
- Optional Floor or Outdoor Sensor
- Pulse Width Modulation
- CSA C US Approved for use in USA and Canada
- Schedule Member (Follows Schedule Master)
- Optimum Start
- Scenes
- Outdoor Temperature Display
- Cool Group Member
- Backlight
- Exercising
- Freeze Protection



## Table of Contents

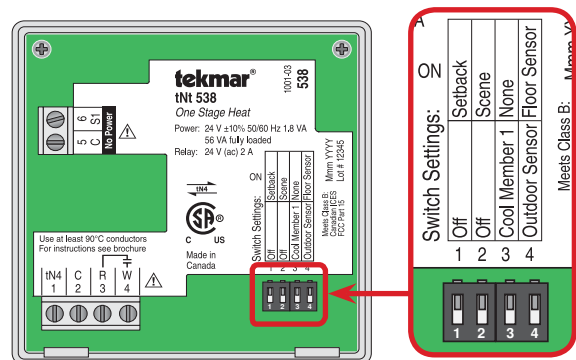
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## Display and Switch Settings

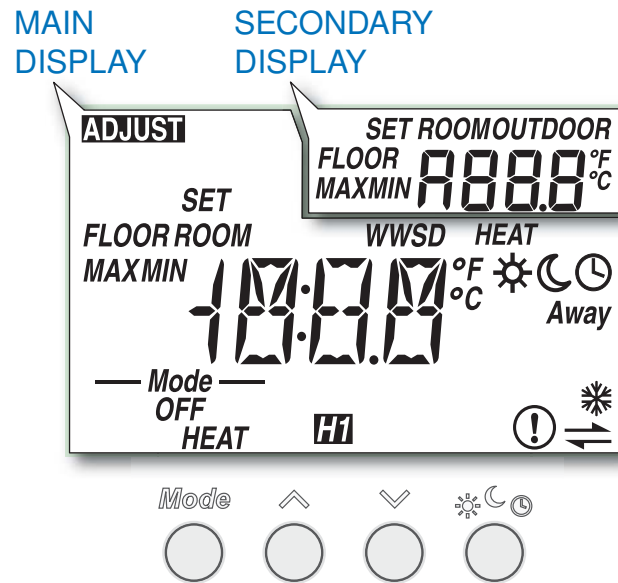
### Switch Settings

Switch	Position	Action
1	ON	<b>SETBACK</b> The thermostat follows a programmable setback schedule as a schedule member if available.
	OFF	<b>OFF</b> The thermostat does not follow a programmable setback schedule.
2	ON	<b>SCENE</b> The thermostat responds to changes in the scene (system wide manual overrides).
	OFF	<b>OFF</b> The thermostat does not respond to scenes.
3	ON	<b>NONE</b> The thermostat is not part of a cooling group.
	OFF	<b>COOL MEMBER 1</b> The thermostat joins as a member of a cooling group.
4	ON	<b>FLOOR SENSOR</b> Auxiliary sensor input configured for floor sensing.
	OFF	<b>OUTDOOR SENSOR</b> Auxiliary sensor input configured for outdoor air sensing.

\*Read the Sequence of Operation for detailed information on each of the switch setting features.



## Display



## Symbols Description

	<b>HEAT</b> Heat is turned on.		<b>WARM WEATHER SHUT DOWN</b> The heating system has been shut off for the summer.
	<b>SUN</b> Operating at the occupied (day) temperature.		<b>COOL GROUP</b> The cooling group is cooling. Heating can start once the cooling is finished.
	<b>MOON</b> Operating at the unoccupied (night) temperature.		<b>tN4 COMMUNICATION</b> Communication is present.
	<b>CLOCK</b> Operating on a programmable schedule.		<b>WARNING SYMBOL</b> Indicates an error is present.
<b>Away</b>	<b>AWAY</b> Operating at the <i>Away</i> scene temperature.		

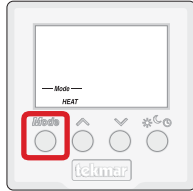
## Button Operation

### Mode Button

The Mode button selects between Heat and Off.

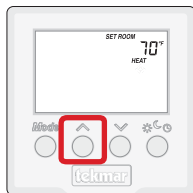
When in Heat Mode the heating system operates to maintain the Set Room or Floor temperature.

When in Off Mode the heating is shut off except for freeze protection.



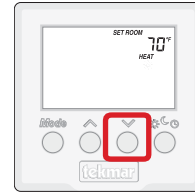
### ^ Button

The ^ button raises the Set Room or Floor temperature.



### v Button

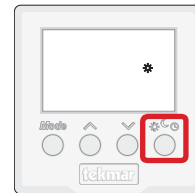
The v button lowers the Set Room or Floor temperature.



### ☼☾🕒 Button

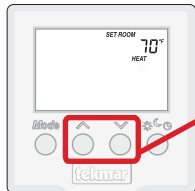
The Local Override (☼☾🕒) button changes between the local override temperatures.

The option is permanent ☼, permanent ☾, or follow the programmable schedule 🕒.



## Setting the Temperature

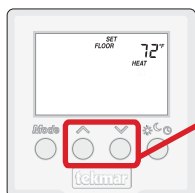
### Room Temperature



Use the ^ or v button to adjust temperature.

Press the ^ or the v button to select the room temperature. The temperature range is from 40°F (4.5°C) to 85°F (29.5°C).

### Floor Temperature



Use the ^ or v button to adjust temperature.

Press the ^ or the v button to select the floor temperature.

A floor sensor is installed and the Room Sensor is set to OFF. The temperature range is from 40°F (4.5°C) to 85°F (29.5°C).

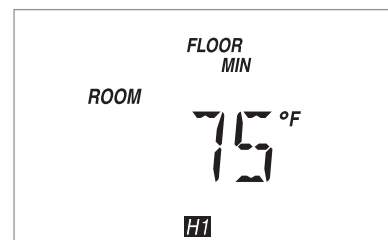
### Room and Floor Temperature

Press the ^ or the v button to select the room temperature.

A floor sensor is required to be installed in the floor. The temperature range is from 40°F (4.5°C) to 85°F (29.5°C).

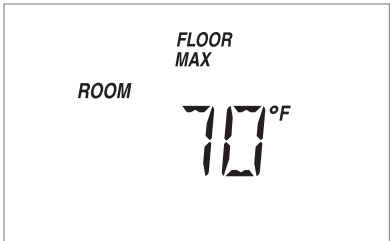
### Floor Min

The room has a temperature setting that is separate from the floor temperature. Should the room temperature be satisfied, the floor may continue to heat in order to maintain its temperature setting. In this case, the words "FLOOR MIN" appear on the display while the heat is on.



## Floor Max

The thermostat also includes a maximum temperature for the floor. If this maximum is reached, "FLOOR MAX" appears on the display and the heat will not turn on.



## Programmable Schedule

When operating on a programmable schedule, a ⌚ symbol is shown, as well as a ☀ or a 🌙. The ☀ or 🌙 indicates the current operating temperature.

Press the Local Override (☀🌙⌚) button to select the ⌚ to operate on a programmable schedule.

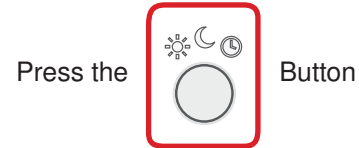
If a ⌚ symbol does not appear, there is no schedule available.

Display	Action
☀	Manual override at occupied temperature.
🌙	Manual override at unoccupied temperature.
☀⌚	Programmable schedule at occupied temperature.
🌙⌚	Programmable schedule at unoccupied temperature.

## Local Override

The Local Override (☀🌙⌚) button can be used to override any schedule. Press and release the ☀🌙⌚ button to toggle between ☀, 🌙, and ⌚ (if available).

The thermostat remains at the selected ☀ or 🌙 override temperature until manually changed back to the schedule.



## Scenes (System Override)

When using scenes, there are three temperature settings: ☀, 🌙, and **Away**. The scene takes precedence over any local overrides or any programmable schedules.

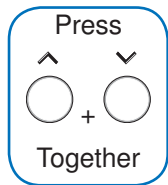
While in the **Away** scene, the room temperature cannot be changed using the ▲ or ▼ buttons. Any floor minimum temperatures are ignored. Change the scene from **Away** to ☀ or 🌙 to change the temperature.

While in the 🌙 or Away scene and the ☀🌙⌚ button is pressed, the 🌙 or Away icon will flash. Scene 1 (☀ or ☀⌚ or 🌙⌚) must be activated before the thermostat responds to the ☀🌙⌚ button.

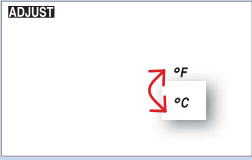
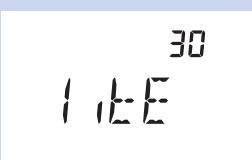



Scene	Display
1	☀ or ☀⌚ or 🌙⌚
2	<b>Away</b>
3	🌙

# Display Settings

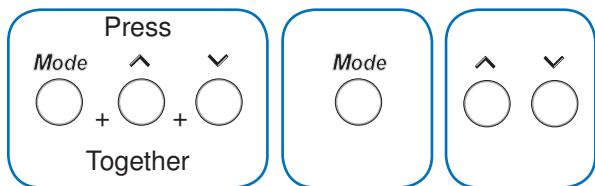
## User Settings (1 of 1)



- Press and hold down both the **^** and **v** buttons to change from one step to the next. While holding both buttons down, a new setting will display every 5 seconds.
- Release both buttons once the step has been reached.
- Press the **^** or the **v** button to change the setting, if available.
- Press and hold down both the **^** and **v** buttons for 5 seconds to go to the next step, OR
- After 10 seconds of no button activity, the display goes back to normal operation.

Display		Description
	<b>STEP 1</b> °F or °C	Press the <b>^</b> or the <b>v</b> button to change from °F to °C and vice versa.
	<b>STEP 2</b> Backlight Off, 30 sec, On	Press the <b>^</b> or the <b>v</b> button to select the backlight to permanent Off, 30 second temporary on, or permanent On.
	<b>STEP 3</b> View Type and Software Version	The large number shows the type number as 538. The software version is shown in the upper right hand corner.
	<b>STEP 4</b> View tN4 Address	The thermostat's tN4 address is shown. The address toggles between a number and "Au" when using automatic addressing.
	<b>STEP 5</b> Manually Change tN4 Address	Press the <b>^</b> or the <b>v</b> button to manually select an address. The address can be returned to automatic "Au" between addresses 24 and 1. Ensure to document the address number when manually addressing thermostats.

## Adjust Menu (1 of 2) \*for installer use only



These settings are intended for use by the installer only and are not required for use by average users of the thermostat.

- Press and release the **Mode**, **^**, and **v** buttons together.
- Press and release the Mode button to go to the next setting.
- Once all settings are complete, wait 20 seconds for the thermostat to return to normal operation.

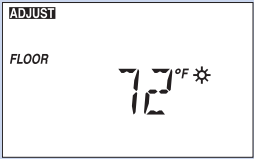

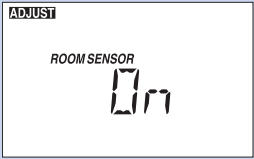
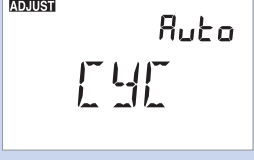


## ADJUST MENU

Display	Range	Description
	40 to 85°F (4.5 to 29.5°C) Default = 70°F (21.0°C)	<b>SET ROOM *</b> Set the room temperature while in the * event. Available when: <ul style="list-style-type: none"> <li>• Room Sensor setting in the Adjust menu is set to On.</li> </ul>
	40 to 85°F (4.5 to 29.5°C) Default = 65°F (18.5°C)	<b>SET ROOM ☾</b> Set the room temperature while in the ☾ event. Available when: <ul style="list-style-type: none"> <li>• Room Sensor setting in the Adjust menu is set to On.</li> </ul>
	40 to 85°F (4.5 to 29.5°C) Default = 62°F (16.5°C)	<b>SET ROOM AWAY</b> Set the room heating temperature while in the <b>Away</b> scene. Available when: <ul style="list-style-type: none"> <li>• Room Sensor setting in the Adjust menu is set to On.</li> </ul>
	OFF, 40 to 85°F (OFF, 4.5 to 29.5°C) Default = 72°F (22.0°C)	<b>SET FLOOR MINIMUM *</b> Set the floor minimum temperature while in the * event. The floor minimum heats the floor even when the room temperature is satisfied. The measured floor temperature is shown in the upper right hand corner of the display. Available when: <ul style="list-style-type: none"> <li>• Room Sensor setting in the Adjust menu is set to On AND</li> <li>• A slab sensor is installed on the auxiliary sensor input AND</li> <li>• Switch setting 4 is set to Floor (On position).</li> </ul>
	OFF, 40 to 85°F (OFF, 4.5 to 29.5°C) Default = 68°F (20.0°C)	<b>SET FLOOR MINIMUM ☾</b> Set the floor minimum temperature while in the ☾ event. The floor minimum heats the floor even when the room temperature is satisfied. The measured floor temperature is shown in the upper right hand corner of the display. Available when: <ul style="list-style-type: none"> <li>• Room Sensor setting in the Adjust menu is set to On AND</li> <li>• A slab sensor is installed on the auxiliary sensor input AND</li> <li>• Switch setting 4 is set to Floor (On position).</li> </ul>
	40 to 90°F, OFF (4.5 to 32.0°C, OFF) Default = 85°F (29.5°C)	<b>FLOOR MAXIMUM</b> Set the floor maximum temperature in order to protect the floor covering. Available when: <ul style="list-style-type: none"> <li>• Room Sensor setting in the Adjust menu is set to On AND</li> <li>• A slab sensor is installed on the auxiliary sensor input AND</li> <li>• Switch setting 4 is set to Floor (On position).</li> </ul>

Continued on next page.

## Adjust Menu (2 of 2) \*for installer use only

# ADJUST MENU

Display	Range	Description
	OFF, 40 to 85°F (OFF, 4.5 to 29.5°C) Default = 72°F (22.0°C)	<b>SET FLOOR *</b> Set the floor temperature while in the * event. Available when: <ul style="list-style-type: none"> <li>Room Sensor setting in the Adjust menu is set to Off AND</li> <li>A slab sensor is installed on the auxiliary sensor input AND</li> <li>Switch setting 4 is set to Floor (On position).</li> </ul>
	OFF, 40 to 85°F (OFF, 4.5 to 29.5°C) Default = 68°F (20.0°C)	<b>SET FLOOR ☺</b> Set the floor temperature while in the ☺ event. Available when: <ul style="list-style-type: none"> <li>Room Sensor setting in the Adjust menu is set to Off AND</li> <li>A slab sensor is installed on the auxiliary sensor input AND</li> <li>Switch setting 4 is set to Floor (On position).</li> </ul>
	On, OFF Default = On	<b>ROOM SENSOR</b> Select whether the built-in air temperature sensor is on or off. When set to off, a floor sensor is required. Available when: <ul style="list-style-type: none"> <li>Switch setting 4 is set to Floor (On position).</li> </ul>
	Auto, SYN Default = Auto	<b>HEAT CYCLES PER HOUR</b> Select either Auto cycle or Synchronize with other thermostats on the tN4 system. Available when: <ul style="list-style-type: none"> <li>There is no tN4 System Control on the tN4 bus.</li> </ul>
	OFF, On Default = OFF	<b>THERMAL MOTOR DELAY</b> Select whether or not a thermal motor (wax actuator) zone valve is operated. Available when: <ul style="list-style-type: none"> <li>A tN4 System Control is on the tN4 bus.</li> </ul>
	1, 2, 3, 4 Default = 1	<b>SCHEDULE</b> Thermostat can follow schedule 1, 2, 3, or 4. Available when: <ul style="list-style-type: none"> <li>Switch setting 1 is set to Setback (On Position).</li> </ul>

After the last item, the control returns to the first item in the Adjust menu.

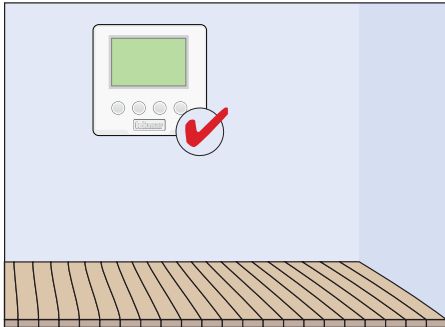


# Sequence of Operation

## Heating Operation

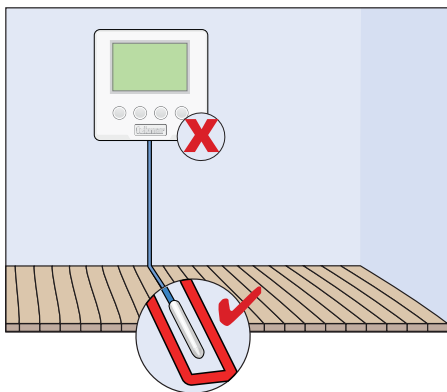
### Room Sensor Only

Set the Room Sensor setting in the Adjust menu to On.  
The thermostat operates the heating system to maintain the Set Room temperature.  
Advantage: Room temperature is comfortable.  
Drawback: Radiant floors can potentially over heat.



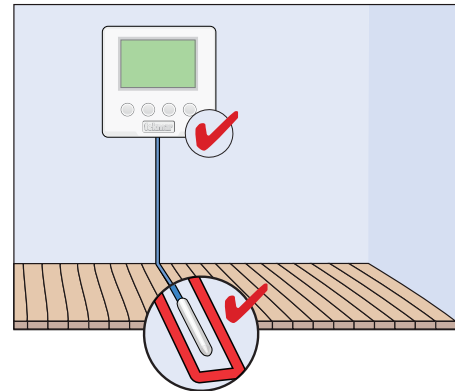
### Floor Sensor Only

The thermostat automatically detects the floor sensor when connected.  
Set switch setting 4 to Floor (On position).  
Set the Room Sensor setting in the Adjust menu to OFF.  
The thermostat operates the radiant floor heating system to maintain the Set Floor temperature.  
Advantage: Floor temperature can be set to be warm to the touch.  
Drawback: Room temperature can overheat.



### Room and Floor Sensors On

The thermostat automatically detects the floor sensor when connected.  
Set switch setting 4 to Floor (On position). Set the Room Sensor setting in the Adjust menu to On.  
The thermostat has three temperature settings:  
1) Floor Maximum  
2) Room  
3) Floor Minimum



The thermostat always maintains at least the floor minimum temperature. The floor minimum setting can be set to off to prevent overheating the room. This shown by area (A) in the diagram below.

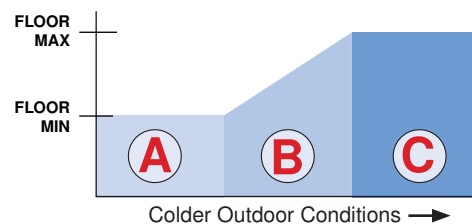
If the room requires heating, the floor temperature is increased from the minimum in order to heat the air. This is shown by area (B) in the diagram below.

The floor maximum prevents the floor temperature from getting too hot in order to protect the floor covering. This is especially important for hardwood floors. This is shown by area (C) in the diagram below.

The thermostat allows the user to easily change the Set Room temperature. The Floor Minimum and Floor Maximum temperatures are set by the installer based on the users requirements.

Advantage: Room temperature is comfortable and floor is protected from over heating damage.

Drawback: None.



**Note:** When using a room and a floor sensor, the floor sensor temperature readout is only visible in the Installer Adjust Menu – Floor Minimum setting.

## Outdoor Temperature Display

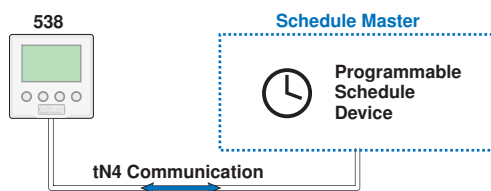
When the thermostat is connected to a tN4 system that includes an outdoor sensor, the outdoor temperature is displayed in the upper right hand corner of the display.

The thermostat can also display the outdoor air temperature if an outdoor air temperature sensor is connected to the

auxiliary sensor input and switch setting 4 is set to Outdoor (Off position). In this configuration, the outdoor air temperature reading is communicated to all other thermostats on the tN4 bus.

## Schedules

This thermostat, when connected to a tN4 communication bus, can follow a programmable schedule in order to automatically lower the room temperature setting.



Lowering the room or floor temperature setting reduces the amount of fuel required to heat the building resulting in energy savings.

For this thermostat to follow a schedule, a device called a schedule master is required. A schedule master can be a programmable tN4 Thermostat (such as models 542, 543, 544, 545, 546), a programmable tN4 Timer 033, or other tN4 devices that indicate they are a tN4 schedule master.

The schedule master may support multiple system schedules. This thermostat can follow system schedule 1, 2, 3, or 4.

To follow a schedule:

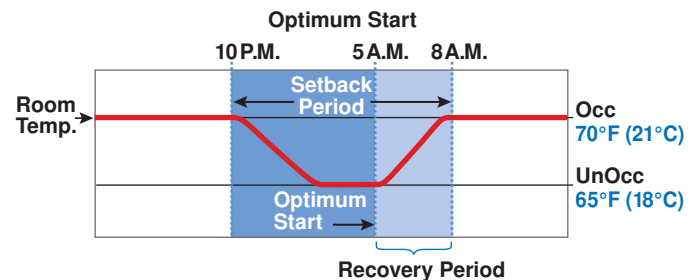
- Select switch setting 1 to Setback (On position).
- Locate the Schedule item in the Adjust menu and select system schedule 1, 2, 3, or 4.

## Optimum Start

When a programmable schedule is selected, there is a time delay for the temperature to change from the  $\text{☾}$  temperature to the  $\text{✱}$  temperature.

The thermostat uses an Optimum Start feature to predict the heat up rate of the room. The optimum start feature allows the room (or floor) to reach the set room (or set floor) temperature by the time set in the programmable schedule.

During the  $\text{☾}$  time period, the user may notice the heat being on even though the room (or floor) temperature is above the set room (or set floor) temperature. This is due to the Optimum Start feature heating the room in order to reach the  $\text{✱}$  temperature on time.



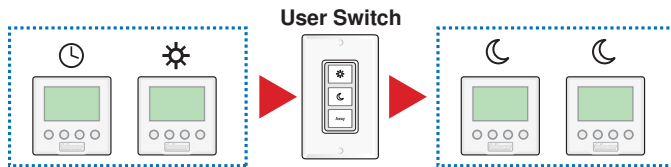
## Scenes

Scenes are system wide manual overrides. By changing the scene number, all scene participating thermostats change their operating temperature at the same time. The scene overrides any time-scheduled changes in temperature.

The purpose of scenes is to provide a quick and convenient method to lower the heating temperature on multiple thermostats throughout a building. This reduces the amount of fuel required to heat the building resulting in energy savings.

Scenes are often used when leaving on vacation, holidays, or special events.

In order to use the scene feature, a device called a User Switch (sold separately) can be used to change the scene number.



This thermostat supports scenes 1, 2, and 3. Scenes 4 through 8 are not supported. Should a permanent scene 4 or 5 be activated, the thermostat operates in scene 1. Should a temporary scene 6, 7, or 8 be activated, the thermostat does not change and remains in the last supported scene.

Scene	Room Temperature Setting
1	Follows programmable schedule if available. If there is no schedule, operates at the occupied ☀ temperature.
2	Away temperature.
3	Unoccupied 🌙 temperature.

## Cool Group Member

In order to prevent heating and cooling at the same time, this thermostat can operate together with other thermostats on a tN4 system to form a cool group.

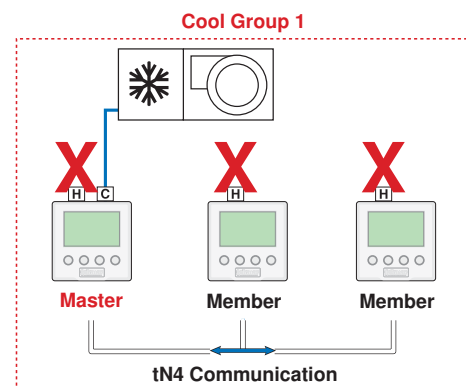
In a cool group, one thermostat is assigned as the cool group master. The cool group master operates the cooling equipment for the group. This thermostat can be set to be a member of the cool group.

When operating as a cool group, the air temperature readings of all the cool group member thermostats are communicated to the cool group master and a temperature average is determined.

When the cool group master is in cooling operation, the cool group member thermostats do not operate the heating system for air heating; however, if a floor minimum temperature is set, then floor warming can continue while the cooling is on.

If the Set Room Heat temperature is adjusted while the cool group is cooling, the snowflake icon is flashed to alert the user that the cooling is presently on. Once the cooling shuts off, the heating can start operation.

This thermostat joins cool group number 1 when switch setting 3 is set to Cool Member 1 (Off position).



## Backlight

The backlight can be adjusted using the "lite" setting. Select Off for the backlight to remain off. Select 30 to turn on the

backlight for 30 seconds after a button is pressed. Select On for the backlight to remain on.

## Warm Weather Shut Down

The thermostat indicates warm weather shut down using the WWSD icon. The WWSD feature prevents the heating system from operating if the outdoor temperature is above the WWSD temperature. The WWSD feature is

activated by the tN4 System Control. In order to disable the WWSD, the tN4 System Control's WWSD setting must be adjusted.

## Freeze Protection

In any event that the room temperature should fall below 40°F (4.5°C), the heating is turned on.

## Cycles Per Hour / Synchronization

When the thermostat is on a tN4 bus together with a tN4 System Control, the thermostat operates on the cycles per hour determined by the tN4 System Control.

When the thermostat is not in communication with a tN4 System Control, the Heating Cycles Per Hour setting in the Adjust menu allows the installer to select either Auto cycles or Sync cycles.

When set to Auto, the thermostat automatically determines the number of cycles per hour.

When set to Sync, the thermostat synchronizes its cycle with other thermostats on the tN4 bus. This causes thermostats to start heating at the same time, increasing the load on the boiler and reducing boiler short cycling.

## Indoor Temperature Feedback

This thermostat, when connected to a tN4 System Control, provides indoor temperature feedback to optimize the water temperature. This allows the tN4 system to operate at the highest efficiency point and allows the heating zones to run for long periods of time, thereby reducing temperature swing and improving comfort in the building.

Indoor temperature feedback also allows the room temperature to quickly recover after night setback ☾ to ✱ by temporarily increasing the water temperature to allow more heat into the system.

## Thermal Motor Zone Valves

If the thermostat is operating a thermal motor (wax actuator) zone valve, set the Thermal Motor Delay setting to On. This provides a three minute delay to allow the zone valve to open before the system pump is turned on. If the thermostat

operates a motorized zone valve or a zone pump, then set the Thermal Motor Delay setting to Off. The Thermal Motor Delay setting is located in the Adjust Menu.

## Exercising

When connected to a tN4 System Control, the thermostat exercises the heat relay for 10 seconds every 3 days. Exercising helps prevent zone valves or zone pumps from

failing due to precipitate buildup. During exercising, the thermostat shows “TEST” on the display.

## Zone Test

The installer can use the tN4 System Control to select one zone at a time to turn on. This is called a zone test. The zone test eliminates the need to for the installer to walk to the thermostat and turn up the heat in order for the zone to turn on and activate the corresponding zone pump or zone valve. This is useful for verifying that the electrical wiring is correct.

If the thermostat address is selected on the tN4 System Control, the thermostat display will show “ZONE TEST On”. If not selected, the thermostat display will show “ZONE TEST OFF”.

## Max Heat

The installer can use the tN4 System Control to turn on all heating zones, and at the same time, operate the heating equipment at 100% output within temperature limits. The thermostat operates at the ✱ temperature setting + 5°F (3°C). This is called max heat. Max heat can be manually stopped or it can last for 24 hours and automatically resume

normal operation. Max heat is useful in order to quickly heat up the building in order to cure concrete, dry sheet rock, or dry paint quickly.

The thermostat display will show “MAX HEAT” while in the max heat operation.

## Flushing

If the thermostat is connected to a tN4 System Control with the Flushing feature turned on, then the thermostat

display will show “FLUSH” for the duration of the flushing operation.

## tN4 Address

When the thermostat uses the tN4 bus to communicate to other devices, the thermostat is automatically assigned an address.

The address includes the tN4 bus number and a device number. The tN4 bus number is only shown when connected to a tN4 System Control. The tN4 bus numbers available are Boiler, 1, 2, 3, etc. The device number can range from 1 to 24. When the thermostat is not connected to a tN4 bus, the address is not available.


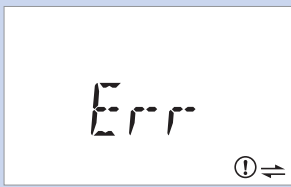
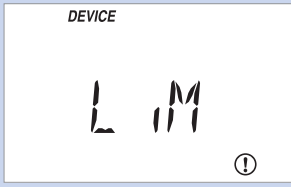
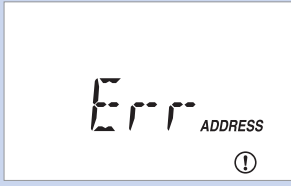

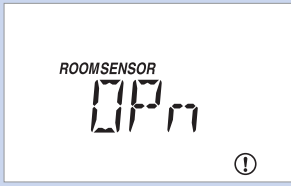
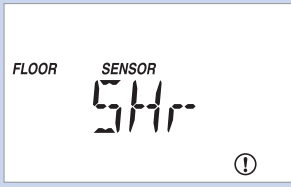
When the thermostat has an automatically set address, the address number and “Au” will toggle back and forth.

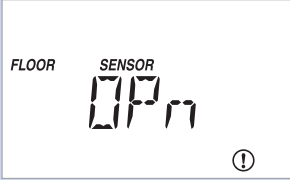
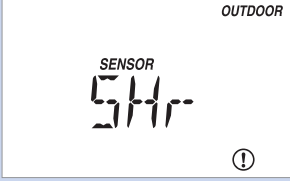
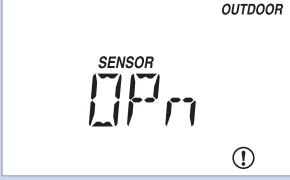
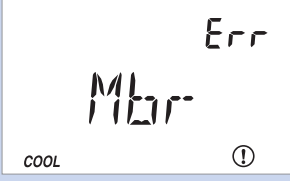
**Note:** Keep track of manually set tN4 addresses. When a tN4 address is manually set, tN4 thermostats using the auto address setting will automatically be assigned new addresses.

If two thermostats are manually set to the same address, an error message will appear. The error remains until one of the addresses is manually changed to a vacant address.

# Error Messages

## Error Messages (1 of 1)

Error Message	Description
	<p><b>CONTROL ERROR</b></p> <p>The thermostat was unable to correctly read settings from memory and has reloaded the factory defaults settings. The thermostat does not operate the heating system while this error message is present.</p> <p>Error clears automatically once all adjust menu settings have been checked.</p> <p>To enter the installer adjust menu, press <b>Mode</b>, <b>^</b>, and <b>v</b> buttons at the same time. Press the Mode button to advance to the next setting.</p>
	<p><b>BUS ERROR</b></p> <p>The tN4 communication bus has either an open or a short circuit. The result is that there are no communications. Check for loose wires. Check for short circuits between the tN4 and C wires. Check for correct polarity between the C and R wires.</p> <p>Error clears automatically once wiring fault has been corrected.</p> <p>If the thermostat is intentionally removed from the tN4 bus, press the <b>^</b> and <b>v</b> buttons together to clear the error message.</p>
	<p><b>DEVICE LIMIT</b></p> <p>The number of devices on the tN4 bus has exceeded 24. Devices include tN4 Thermostats and tN4 Setpoint Controls. The device count must be lowered to 24 or less. If possible, move devices to other tN4 busses.</p> <p>Error clears automatically once the number of devices on the tN4 bus is at 24 or lower.</p>
	<p><b>ADDRESS ERROR</b></p> <p>This thermostat and another device have been manually given the same tN4 address.</p> <p>Error clears automatically once this thermostat is given a new manually set address or if the thermostat is set to automatic addressing.</p>
	<p><b>ROOM SENSOR SHORT CIRCUIT</b></p> <p>The built-in air temperature sensor has a short circuit fault.</p> <p>This error cannot be field repaired.</p> <p>Contact your wholesaler or tekmar sales representative for details on the repair procedures.</p>
	<p><b>ROOM SENSOR OPEN CIRCUIT</b></p> <p>The built-in air temperature sensor has an open circuit fault.</p> <p>This error cannot be field repaired.</p> <p>Contact your wholesaler or tekmar sales representative for details on the repair procedures.</p>
	<p><b>FLOOR SENSOR SHORT CIRCUIT</b></p> <p>The floor sensor has a short circuit. Check for damaged wires. Locate and repair the problem as described in the Data Brochure D 079.</p> <p>Error clears once the floor sensor fault is corrected.</p>

Error Message	Description
 <p>The display shows the text "FLOOR" on the left, "SENSOR" above "OPn", and a warning icon (exclamation mark in a circle) at the bottom right.</p>	<p><b>FLOOR SENSOR OPEN CIRCUIT</b></p> <p>The floor sensor has an open circuit. Check for loose or damaged wires. Locate and repair the problem as described in the Data Brochure D079.</p> <p>Error clears once the floor sensor fault is corrected.</p> <p>If the floor sensor is intentionally removed, locate the Room Sensor setting in the Adjust menu and set to On. Power the thermostat down and up to clear the error.</p>
 <p>The display shows the text "OUTDOOR" on the right, "SENSOR" above "SHr", and a warning icon (exclamation mark in a circle) at the bottom right.</p>	<p><b>OUTDOOR SENSOR SHORT CIRCUIT</b></p> <p>The outdoor sensor has a short circuit. Check for damaged wires. Locate and repair the problem as described in the Data Brochure D070.</p> <p>Error clears after the outdoor sensor fault is corrected.</p>
 <p>The display shows the text "OUTDOOR" on the right, "SENSOR" above "OPn", and a warning icon (exclamation mark in a circle) at the bottom right.</p>	<p><b>OUTDOOR SENSOR OPEN CIRCUIT</b></p> <p>The outdoor sensor has an open circuit. Check for loose or damaged wires. Locate and repair the problem as described in the Data Brochure D070.</p> <p>Error clears once the outdoor sensor fault is corrected.</p> <p>If the outdoor sensor is intentionally removed, power the thermostat down and up to clear the error.</p>
 <p>The display shows the text "COOL" on the left, "Mbr" in the center, "Err" on the right, and a warning icon (exclamation mark in a circle) at the bottom right.</p>	<p><b>COOL MEMBER ERROR</b></p> <p>Switch setting number 3 has been selected to join a cooling group as a member, yet there is no cooling group master thermostat.</p> <p>Error clears once the thermostat detects a cool group master or switch setting number 3 is set to none (On position).</p>

## Cleaning the Thermostat

The thermostat's exterior can be cleaned using a damp cloth. Moisten the cloth with water and wring out prior to wiping the control. Do not use solvents or cleaning solutions.

## Limited Warranty and Product Return Procedure

**Limited Warranty** *The liability of tekmar under this warranty is limited. The Purchaser, by taking receipt of any tekmar product ("Product"), acknowledges the terms of the Limited Warranty in effect at the time of such Product sale and acknowledges that it has read and understands same.*

The tekmar Limited Warranty to the Purchaser on the Products sold hereunder is a manufacturer's pass-through warranty which the Purchaser is authorized to pass through to its customers. Under the Limited Warranty, each tekmar Product is warranted against defects in workmanship and materials if the Product is installed and used in compliance with tekmar's instructions, ordinary wear and tear excepted. The pass-through warranty period is for a period of twenty-four (24) months from the production date if the Product is not installed during that period, or twelve (12) months from the documented date of installation if installed within twenty-four (24) months from the production date.

The liability of tekmar under the Limited Warranty shall be limited to, at tekmar's sole discretion: the cost of parts and labor provided by tekmar to repair defects in materials and / or workmanship of the defective product; or to the exchange of the defective product for a warranty replacement product; or to the granting of credit limited to the original cost of the defective product, and such repair, exchange or credit shall be the sole remedy available from tekmar, and, without limiting the foregoing in any way, tekmar is not responsible, in contract, tort or strict product liability, for any other losses, costs, expenses, inconveniences, or damages, whether direct, indirect, special, secondary, incidental or consequential, arising from ownership or use of the product, or from defects in workmanship or materials, including any liability for fundamental breach of contract.

The pass-through Limited Warranty applies only to those defective Products returned to tekmar during the warranty period. This Limited Warranty does not cover the cost of the parts or labor to remove or transport the defective Product, or to reinstall the repaired or replacement Product, all such costs and expenses being subject to Purchaser's agreement and warranty with its customers.

Any representations or warranties about the Products made by Purchaser to its customers which are different from or in excess of the tekmar Limited Warranty are the Purchaser's sole responsibility and obligation. Purchaser shall indemnify and hold tekmar harmless from and against any and all claims, liabilities and damages of any kind or nature which arise out of or are related to any such representations or warranties by Purchaser to its customers.

The pass-through Limited Warranty does not apply if the returned Product has been damaged by negligence by persons other than tekmar, accident, fire, Act of God, abuse or misuse; or has been damaged by modifications, alterations or attachments made subsequent to purchase which have not been authorized by tekmar; or if the Product was not installed in compliance with tekmar's instructions and / or the local codes and ordinances; or if due to defective installation of the Product; or if the Product was not used in compliance with tekmar's instructions.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WHICH THE GOVERNING LAW ALLOWS PARTIES TO CONTRACTUALLY EXCLUDE, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, DURABILITY OR DESCRIPTION OF THE PRODUCT, ITS NON-INFRINGEMENT OF ANY RELEVANT PATENTS OR TRADEMARKS, AND ITS COMPLIANCE WITH OR NON-VIOLATION OF ANY APPLICABLE ENVIRONMENTAL, HEALTH OR SAFETY LEGISLATION; THE TERM OF ANY OTHER WARRANTY NOT HEREBY CONTRACTUALLY EXCLUDED IS LIMITED SUCH THAT IT SHALL NOT EXTEND BEYOND TWENTY-FOUR (24) MONTHS FROM THE PRODUCTION DATE, TO THE EXTENT THAT SUCH LIMITATION IS ALLOWED BY THE GOVERNING LAW.

**Product Warranty Return Procedure** All Products that are believed to have defects in workmanship or materials must be returned, together with a written description of the defect, to the tekmar Representative assigned to the territory in which such Product is located. If tekmar receives an inquiry from someone other than a tekmar Representative, including an inquiry from Purchaser (if not a tekmar Representative) or Purchaser's customers, regarding a potential warranty claim, tekmar's sole obligation shall be to provide the address and other contact information regarding the appropriate Representative.



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